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EXAMINER

AMINZAY, SHAIMA Q

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/518,585	<b>Applicant(s)</b> EICHINGER ET AL.	
	<b>Examiner</b> SHAIMA Q. AMINZAY	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## ***DETAILED ACTION***

This office action is in response to applicant's amendment/remarks filed 12/21/2007.

### ***Response to Arguments***

Applicant's arguments have been fully considered.

1. Applicant's argument with respect to Claim Objections with respect to claims 11-25 **moot** as the amendment to the claims meets the requirements, therefore, The Claim Objections with respect to claims 11-25 withdrawn.
2. Response to arguments with respect to rejected claims 11-30 under Claim Rejections - 35 USC 102(e) is **moot** in view of the new ground(s) of rejection necessitated by the claims amendments, therefore, the Claim Rejections-35 U.S.C. 102(e) with respect to claims 11-30 withdrawn.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11-15, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khayrallah (Khayrallah, U.S. Patent 7,113,745) in view of Ikeda (Ikeda et al., U.S. Patent 6,728,918).

Regarding claim 11, Khayrallah discloses a method for transmitting data in a radio communication system (*e.g. Fig. 1-4, Abstract In 1-4, 1:39-45, the data is being transmitted in the radio system (10)*), comprising: transmitting data from a transmitting station to a data-receiving station over at least two relay stations (*e.g. Fig. 1-4, Abstract In 1-4, 1:39-45, 2:23-27, 3:61-62, 5:42-45, the communication system (10) includes transmitting data from transmitting station (20) to the data receiving station (50) over at least two relay stations such as repeaters (30 and 40)*), each relay station receiving and forwarding the data (*e.g. Fig. 1-4, Abstract In 1-4, 5:42-45, 3:61-62, 4:10-23, each of the relay stations such as repeaters(30 and 40) forwards the data*); [generating requests] for retransmission if it is determined that the received data is not sufficiently free of error (*e.g. Fig. 1-4, 3:19-24, 4:20-38, 50-51, 54-61, 5:45-67, 6:1-6, the received data is being evaluated for fading estimations and being transmitted to the receiver, the receiver "sends information about the received signals to the" repeater device (30, 40), the repeater retransmits signals to the receiver*), the [requests for] retransmission being generated only at the receiving station (*e.g. Fig. 1-4, 3:19-24, 4:20-38, 50-51, 54-61, 5:45-67, 6:1-6, the retransmission is being generated only for the receiving station (50)*); and retransmitting the data from the transmitting station [if a request] for retransmission is received from the receiving station (*e.g. Fig. 1-4, Abstract In 1-4, 2:21-27, 3:22-32,*

*4:10-23, 5:63-67, 6:1-6, the receiving station (50) sends inquiry to the transmitting station, and the signals are being retransmitted to the receiving station (50)).*

Khayrallah does not specifically teach the request for retransmission, however, Khayrallah teaches sending “information about the received signals to the” signal transmitter (*e.g. Fig. 1-4, 3:19-24, 4:20-38, 50-51, 54-61, 5:45-67, 6:1-6, the receiver device (50) sends “information about the received signals to the” transmitter, and the transmitter retransmits signals for the receiver device (50), and further, the receiver device (50) is able to sends inquiries (request) for transmission.*

In a related art dealing with communication system relaying retransmission signal (*e.g., 2:26-29, 10:31-40, 12:1-22*), Ikeda teaches the receiver request for retransmission (*e.g., 10:31-40, 12:1-22, 13:42-47, 20:54-57, the receiver request for retransmission*).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Ikeda’s transmission relay communication system retransmission request with Khayrallah’s transmission relay communication system retransmission “to provide a method and a system for relay transmission being free from data collision with a transmission request on data links and accordingly causing no failure in relay” (Ikeda, *e.g., 2:26-29*).

Regarding claim 26, Khayrallah discloses a relay station of a radio communication station (*e.g. Fig. 1-4, Abstract ln 1-4, 1:39-45, the relay station such (30 or 40) of the radio communication system (10)*), comprising: a receiving device to receive data destined for a receiving station (*e.g. Fig. 1-4, Abstract ln 1-4, 1:39-45, 5:63-67, 6:13-15,*

*19-21, 25-59, the receiver (380) receives data to be sending to receiving station (e.g. 50)); [an analyzing device] to analyze said data with regard to its reception quality and produce a reception result (e.g. Fig. 1-4, Abstract In 1-4, 1:39-45, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59, the processor and controller (e.g. 220, 320) evaluating transmission data with respect receiving quality and generate outcome); and a transmitting device to selectively forward the data to the receiving station, depending on the reception result of the analyzing device (e.g. Fig. 1-4, Abstract In 1-4, 1:39-45, 5:33-37, 42-45, 63-67, 6:1-6, 13-15, 19-21, 25-59, the transmitting device (20) chooses the data transmission to the reception station (50) according to the feedback information that is generated).*

Khayrallah does not specifically teach an analyzer device, however, Khayrallah teaches retransmission when “message transmitted between tow units in the system are lost or garbled” is being configured (*e.g. 1:12-15, 5:45-67, configuring when transmission signal is lost no information is going to be sent from the receiver as normal that is sending “information about the received signals to the” signal transmitter*).

In a related art dealing with communication system relaying retransmission signal (*e.g., 2:26-29, 10:31-40, 12:1-22*), Ikeda teaches the analyzer device (*e.g., 12:1-22, the analyzer (103) analyzing transmission signals*).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Ikeda’s transmission relay communication system retransmission analyzer with Khayrallah’s transmission relay communication system retransmission “to provide a method and a system for relay transmission being free from data collision with

a transmission request on data links and accordingly causing no failure in relay” (Ikeda, *e.g.*, 2:26-29).

Regarding claim 13, Khayrallah in view of Ikeda teach all the limitations of claim 11, and further, Khayrallah teaches wherein at least one of the relay stations checks the data received from the transmitting station with regard to reception quality (*e.g.*, 1:39-45, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59), if the reception quality does not meet a determined level of quality of received data (*e.g.* 5:30-67, *the signal (e.g., S1, S2) needs to meet the specific quality level and the low signal quality is the fading signal that is not being transmitted*), the relay station does not forward said data to the receiving station (*e.g.* 5:30-67, *the signal is not going to be transmitted to the receiving station*), and if the reception quality meets a determined level of quality of received data, the relay station does forward said data to the receiving station (*e.g.* 5:30-67, *the quality signal is being transmitted to the receiving device (50)*).

Regarding claim 14, Khayrallah in view of Ikeda teach all the limitations of claim 13, and further, Khayrallah teaches wherein the relay stations receive the data in parallel and check the reception quality of the received data (*e.g.*, 2:21-27, 3:22-32, 4:10-23, 5:63-67, 6:1-6), a first relay station receives the data with acceptable reception quality, and only the first relay station transmits the data to the receiver station (*e.g.*, 2:21-27, 3:22-32, 4:10-23, 5:63-67, 6:1-6).

Regarding claim 15, Khayrallah in view of Ikeda teach all the limitations of claim 13, and further, Khayrallah teaches wherein error correction and/or error detection is performed in at least one of the relay stations prior to forwarding the data (*e.g.*, 1:12-22, 5:63-67, 6:1-6)

Regarding claims 16, and 27, Khayrallah in view of Ikeda teach all the limitations of claims 11, 26, and further, Khayrallah teaches wherein a plurality of the relay stations receive the data in parallel (*e.g.* Fig. 1-4, Abstract ln 1-4, 1:39-45), check the reception quality of the data and produce a reception result (*e.g.*, 1:39-45, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59), and in at least a first relay station, a determination is made on whether or not to forward the data based on the reception result of the first relay station and based on the reception result of another relay station (*e.g.* Fig. 1-4, Abstract ln 1-4, 1:39-45, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59).

Regarding claim 17, Khayrallah in view of Ikeda teach all the limitations of claim 11, and further, Khayrallah teaches wherein the transmitting station, the receiving station and at least some of the relay stations belong to a radio communication system communicating on a single frequency (*e.g.*, 4:10-23, 54-67, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59).

Regarding claims 18, and 28, Khayrallah in view of Ikeda teach all the limitations of claims 11, 26, and further, Khayrallah teaches wherein the data is forwarded over



different parallel paths via different relay stations, and the data is preemphasized and/or deemphasized in the relay stations (*e.g. Fig. 1-4, Abstract ln 1-4, 1:39-45, 4:1-42, 5:33-37, 42-45, 63-67, 6:1-6, 13-15, 19-21, 25-59*).

Regarding claims 19, and 29, Khayrallah in view of Ikeda teach all the limitations of claims 11, 26, and further, Khayrallah teaches wherein the data is forwarded over different parallel paths via different relay stations, and the data is decoded and/or encoded in the relay stations (*e.g., 1:39-45, 48-50, 4:1-42, 5:33-37, 42-45, 63-67, 6:1-6, 13-15, 19-21, 25-59*).

Regarding claims 20, and 30, Khayrallah in view of Ikeda teach all the limitations of claims 11, 26, and further, Khayrallah teaches wherein the data is transmitted in parallel over different paths, and the data is received overlaid at the receiver station and processed jointly (*e.g., 1:39-45, 48-50, 4:1-42, 5:33-37, 42-45, 63-67, 6:1-6, 13-15, 19-21, 25-59*).

4. Claims 12-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khayrallah (Khayrallah, U.S. Patent 7,113,745) in view of Brederveld (Brederveld et al., U.S. Patent 5,898,679).

Regarding claim 12, Khayrallah discloses the method for transmitting data in a radio communication system (*e.g. Fig. 1-4, Abstract ln 1-4, 1:39-45, the data is being transmitted in the radio system (10)*), comprising: transmitting data from a transmitting

station to a data-receiving station over at least two relay stations (*e.g. Fig. 1-4, Abstract In 1-4, 1:39-45, 2:23-27, 3:61-62, 5:42-45, the communication system (10) includes transmitting data from transmitting station (20) to the data receiving station (50) over at least two relay stations such as repeaters (30 and 40)), each relay station receiving and forwarding the data (e.g. Fig. 1-4, Abstract In 1-4, 5:42-45, 3:61-62, 4:10-23, each of the relay stations such as repeaters(30 and 40) forwards the data); acknowledging receipt of the data with an acknowledgement by the data receiving station (e.g. Fig. 1-4, Abstract In 1-4, 2:21-27, 3:22-32, 4:10-23, 5:63-67, 6:1-6, the receiver sends receiving data notification information); and retransmitting the data in the event of unsuccessful transmission of the data(e.g. Fig. 1-4, Abstract In 1-4, 2:21-27, 3:22-32, 4:10-23, 5:63-67, 6:1-6, data is being retransmitted to overcome the transmission problems); [when the acknowledgement is not received,] retransmission of the data being controlled only by the transmitting station (e.g. Fig. 1-4, Abstract In 1-4, 2:21-27, 3:22-32, 4:10-23, 5:63-67, 6:1-6, the data is being retransmitted when transmission having problems and transmitting station controls data transmission).*

Khayrallah does not specifically teach retransmit when the acknowledgement is not received, however, Khayrallah teaches retransmission when “message transmitted between tow units in the system are lost or garbled” (*e.g. 1:12-15, 5:45-67, when transmission signal is lost no information is going to be sent from the receiver as normal that is sending “information about the received signals to the” signal transmitter).*

In a related art dealing with communication system relaying retransmission signal (*e.g., 1:60-65, 2:57-67, 4:55-59*), Brederveld teaches retransmit when the

acknowledgement is not received (*e.g.*, 1:60-65, 2:57-67, 4:55-59).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Brederveld's transmission relay communication system retransmission without receiving acknowledgement with Khayrallah's transmission relay communication system retransmission to provide the transmission relay communication system with retransmission "only upon an indication that the destination end-station has not received a message error-free" to consumes less bandwidth (Brederveld, *e.g.*, 1:60-65, 2:2-7).

Regarding claim 21, Khayrallah in view of Brederveld teach all the limitations of claim 12, and further, Khayrallah teaches wherein at least one of the relay stations checks the data received from the transmitting station with regard to reception quality (*e.g.*, 1:39-45, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59), if the reception quality does not meet a determined level of quality of received data (*e.g.* 5:30-67, *the signal (e.g., S1, S2) needs to meet the specific quality level and the low signal quality is the fading signal that is not being transmitted*), the relay station does not forward said data to the receiving station (*e.g.* 5:30-67, *the signal is not going to be transmitted to the receiving station*), and if the reception quality meets a determined level of quality of received data, the relay station does forward said data to the receiving station (*e.g.* 5:30-67, *the quality signal is being transmitted to the receiving device (50)*).

Regarding claim 22, Khayrallah in view of Brederveld teach all the limitations of

claim 12, and further, Khayrallah teaches wherein the relay stations receive the data in parallel and check the reception quality of the received data (*e.g.*, 2:21-27, 3:22-32, 4:10-23, 5:63-67, 6:1-6), a first relay station receives the data with acceptable reception quality, and only the first relay station transmits the data to the receiver station (*e.g.*, 2:21-27, 3:22-32, 4:10-23, 5:63-67, 6:1-6).

Regarding claim 23, Khayrallah in view of Brederveld teach all the limitations of claim 12, and further, Khayrallah teaches wherein error correction and/or error detection is performed in at least one of the relay stations prior to forwarding the data (*e.g.*, 1:12-22, 5:63-67, 6:1-6)

Regarding claim 24, Khayrallah in view of Brederveld teach all the limitations of claim 12, and further, Khayrallah teaches wherein a plurality of the relay stations receive the data in parallel (*e.g.* Fig. 1-4, Abstract ln 1-4, 1:39-45), check the reception quality of the data and produce a reception result (*e.g.*, 1:39-45, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59), and in at least a first relay station, a determination is made on whether or not to forward the data based on the reception result of the first relay station and based on the reception result of another relay station (*e.g.* Fig. 1-4, Abstract ln 1-4, 1:39-45, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59).

Regarding claim 25, Khayrallah in view of Brederveld teach all the limitations of claim 12, and further, Khayrallah teaches wherein the transmitting station, the receiving station

and at least some of the relay stations belong to a radio communication system communicating on a single frequency (*e.g.*, 4:10-23, 54-67, 5:33-37, 42-45, 63-67, 6:13-15, 19-21, 25-59).

### ***Conclusion***

The prior art made of record considered pertinent to applicant's disclosure, see PTO-892 form.

Applicant's amendment necessitated the **new ground(s)** of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 571-272-7874. The examiner can normally be reached on 7:00 AM -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew D. Anderson can be reached on 571-272-4177. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Shaima Q. Aminzay/  
Examiner, Art Unit 2618

March 22, 2008

/Matthew D. Anderson/  
Supervisory Patent Examiner, Art Unit 2618